



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

by Walter Long, Esq., and we do report that the whole of the plantations have been well filled up, and are now full of young healthy trees of various kinds, and in a thriving state, likely to produce profitable timber, and that they are well fenced in, and secured from cattle.

Sworn before me, one of His
Majesty's Justices of the
Peace for the County of
Southampton, this 26th
day of January, 1827.
GRIFFITH COLPOYS.

RICHARD MILLS,
Yeoman, Beauworth.

WILLIAM GODDARD,
Land Surveyor, Kilminster.

II.—MANAGEMENT OF PLANTATIONS.

*The LARGE SILVER MEDAL was this Session voted to
W. WITHERS, Jun. Esq. of Holt, in Norfolk, for the
following Communication respecting the MANAGEMENT
of PLANTATIONS of FOREST TREES.*

SIR;

Holt, Norfolk,
October 23, 1826.

THE principal object of the present memoir is to communicate to the Society the result of several experiments on manuring land for forest trees, as well as to demonstrate the absolute necessity of deeply ploughing or trenching land previous to planting, and of keeping it clean and free from weeds, for some years afterwards. I had myself been long satisfied that this latter method was *indispensable* to insure success upon land such as is usually selected for planting, and believed most other planters were of the same opinion; but, notwithstanding all that has been said and written on the subject, and though proofs of the utility of trenching and cleaning;

and of the loss and disappointment attending a contrary practice are daily and hourly presenting themselves to observation, there are great numbers of gentlemen who, with these proofs before their eyes, still persist in attempting to raise plantations by merely digging holes, and putting in the trees, and then leaving them to take their fate amongst the whins, the fern, or the heath; the weeds or other rubbish with which they are surrounded, and by which the more valuable trees are, in most cases, entirely destroyed in a few years. I will now state as concisely as possible the result of my own experience as to the utility of trenching land previously to planting, and of keeping it clean afterwards.

In the year 1811 I planted a piece of land in this parish containing about five acres adjoining my house. I call this plantation No. 1. The land had been recently inclosed under an act of parliament, and at the time I planted it, was covered with heath and whins. I caused large holes to be dug, in which I planted Scotch firs, and a proper assortment of deciduous trees. The firs succeeded pretty well, but the other trees made no progress; and, although I yearly filled up the vacancies occasioned by death and decay, I found at the end of four or five years, that all the trees, except the Scotch firs, with very few exceptions, were dead, or in a dying state. I then had all the ground trenched, and the vacancies filled up with oak, ash, chesnut, elm, and other deciduous trees, and have kept it regularly hoed and free from weeds ever since: the consequence has been, that the last mentioned trees have made such a rapid growth that I have been enabled to clear away the greater part of the firs, and the remainder must be taken out in another year or two, to give room for the other trees. One mountain ash, which had escaped the deadly effect of the heath and whins, gave a decided proof of the advantages of trenching and

cleaning the land. This tree had barely kept alive, not making more than two or three inches of wood in a year; but in the year following the trenching, it threw out two leading shoots, the smallest of which I cut off at the Michaelmas, when it measured six feet two inches, the growth of one year.

In the spring of 1819 I planted another piece, No. 2, containing about half an acre, adjoining No. 1. This land was trenched two feet deep, and has since been kept perfectly clean; and so great is the advantage of preparing the land properly in the *first instance*, that the trees on No. 2 are now much superior to those on No. 1, *planted eight years before*, although the latter have had the benefit of hoeing during the last nine or ten years.

It is worthy of remark, too, that in this last plantation, No. 2, the deciduous trees have far outstripped the Scotch firs in growth; and I believe it is universally the case, that where land is *properly prepared and kept clean*, deciduous trees will make much more wood than firs, and that where the hole-digging system is adopted (unless the land is very good), the firs are the only trees that will succeed.

The same year in which my plantation, No. 1, was made, two pieces of land not a hundred yards distant from mine were planted, one by the late Mr. Richard Gurney, and the other by Mr. Hardy. Mr. Gurney's land was ploughed very deep with a four-horse plough; and large holes were dug among the heath in Mr. Hardy's. A good assortment of forest trees was planted in both; but at the expiration of three years, Mr. Hardy, finding many of his trees dead, and the others making little or no progress, *trenched his land*, and filled up the vacancies, and has since kept it *regularly hoed* and clean from weeds. Mr. Gurney's has been entirely neglected, and the heath and whins have been suffered to grow to the

height of several feet. The consequences are, that Mr. Hardy has at this time a fine flourishing plantation, while in Mr. Gurney's (which is divided from Mr. Hardy's by the road only) all the deciduous trees are dead, and nothing remains but Scotch and larch firs.

A plantation made by Mr. Mott, about half a mile further on towards Cromer, where the land was properly ploughed and planted, but has been neglected since, affords another proof of the necessity of cleaning the land, and keeping it clean. The trees have been declining yearly, and nothing now remains but a few scrubby Scotch firs, although an abundance of other trees was originally planted with them.

Different motives operate on gentlemen to prevent their keeping young plantations clean. Some think it not only unnecessary, but injurious, to the young plants ; the weeds, they say, keeping the land moist, and shading the roots of the plants from the heat of the sun, while stirring the ground lets in the drought. Others object to the expense (about sixteen shillings an acre per annum for three years), and almost all, I believe, are apprehensive, that by keeping the land free from weeds, the cover for GAME would be destroyed.

As to the first of these objections, nothing can be more palpably erroneous. It is well known that nurserymen spare no pains or expense to keep their ground free from weeds, and gardeners invariably do the same, as the most effectual means of promoting the growth of their plants. It must be evident, that every weed which is suffered to grow, must rob the ground of a portion of food which the plants would otherwise receive ; and this is a consideration of the *utmost importance, when it is remembered that, during the first two or three years of the growth of young trees, they must be principally indebted to the superficial soil for their nourishment ;* and

moreover, land which is suffered to get hard cannot imbibe so much of the atmospheric moisture as it would receive if the surface were kept in an open and *loose* state by the hoe. It is quite a mistake to suppose that stirring land in dry weather lets in the drought. On the contrary, it is the only effectual means of keeping it in a moist state, the loose mould detached by the hoe operating as a shade upon the soil beneath. Let sand about two inches thick be laid upon a piece of broken ground, and in the hottest weather, moisture will be found below; while the ground adjoining (not shaded by the sand) will, if not pulverised, be hard and dry for nearly a foot in depth; and hoeing produces the same effect as the sand. As to any other shade than that produced by hoeing, the plants want none, and the more powerful the heat of the sun, the faster they will grow, even upon the lightest soils. As to the expense of hoeing, what can be the object of sixteen shillings an acre for three years, compared with the difference in value between fine growing plants of oak, ash, and chesnut, and worthless Scotch firs? Most gentlemen plant for future profit: planting, we all know, cannot be done in the *worst* manner without expense, and if the extra cost, which *insures* a profitable crop be spared, the object is entirely defeated, and the money which is expended wholly thrown away. It would be quite as reasonable for a farmer to incur all the cost of preparing his land for turnips, and then to lose his crop, rather than be at the expense of hoeing it, as it is for a gentleman to lay out his money in putting trees into the ground, and then omitting to expend such an *additional* sum as is *absolutely necessary* to make them productive.

The objection about game is quite as untenable as the others. I admit that heath and whins will afford better

cover than land in a clean state, but this will not last many years under Scotch firs, which, it is well known, will destroy all vegetation beneath them. A good permanent cover is not to be had in a plantation without *underwood*, and this cannot be made to grow among heath and whins, nor unless the ground be kept perfectly clean. To hoe young plantations is, therefore, not less necessary to obtain a good cover for game, than it is to ensure a profitable crop of timber.

I have hitherto confined my observations to cases in my own neighbourhood ; but I could cite numerous other instances even there, as in other parts of the kingdom, of the total failure of plantations for want of trenching and cleaning, and of the success of others where that mode of planting and keeping the land clean has been adopted : indeed, a volume might soon be filled on the subject. The first person, I believe, who introduced the hoe into young plantations in this county was my friend MR. SANDYS, of Wells, next the sea, who began to plant upon the Holkham estate for Mr. Coke, about forty-six years ago, and who has succeeded in raising for that gentleman, and upon a *poor* soil, nearly one thousand acres of the most flourishing and valuable trees in the kingdom : but I sincerely believe that *if these trees had been assisted in their early growth by manure*, Mr. Coke's estate would have been worth at least *one hundred thousand pounds more* than it now is. This may be regarded as a bold assertion, but I am convinced that the estimate is below the mark. These plantations are from twenty-four to forty-six years old, which gives an average of thirty-five years ; and if we add only three pounds an acre per annum for that period, for *extra* growth, in consequence of manure (which is a mere trifle, compared with the actual increase), it will amount to more than

one hundred pounds an acre.* From Mr. Sandys I first learnt the necessity of trenching and cleaning land for trees, and the reasons which I have before urged to show

* Three pounds an acre is only $4\frac{1}{2}d.$ per rod, which the experienced observer will consider much under the annual difference between fast and slow growing trees.

Since writing the above, I have been favoured by a friend with the 26th volume of the Transactions of the Society, containing a communication from Mr. Charles Waistell, and several ingenious tables constructed by him for showing the progressive annual increase in the growth of trees. Mr. Waistell states, from his own experience, from the best information he could obtain of his acquaintance, and from various authors, that the increase in the circumference of trees is generally from one to two inches annually, and from twelve to eighteen inches the annual increase in height. Now, if trees planted upon poor land, without manure, will annually increase twelve inches in height and one inch in circumference, it may, I think, be fairly assumed, that upon land *well manured*, they will increase annually at least eighteen inches in height, and two inches in circumference. The latter growth will produce six times as much timber in any given period as the former. A tree thirty-six years of age, growing twelve inches annually in height, and one inch in circumference, will contain only five feet and nine parts of an inch of timber [*vide* Appendix, Table 1]; whereas, when growing at the rate of eighteen inches in height and two inches in circumference, it will contain thirty feet, four inches, and six parts of an inch [Appendix, Table 2]. Some of the tables show the number of trees to be cut out in the thinning of woods, and the number left standing at every period of four years, from twenty up to sixty-four years, and the number of feet they will respectively contain at those periods. From these tables it appears that if trees annually increase twelve inches in height, and one inch in circumference, there should be cut out per acre,

TABLE No. 3.	<i>Trees.</i>	<i>Feet.</i>
During thirty-six years .	1,882	containing 3,036
and left standing	840	containing 4,252
	<u>2,722</u>	<u>7,288</u>

that necessity have been mostly derived from him; and I think it no more than just to offer this testimony to the merit of a gentleman, who is no less distinguished

while the contents of trees taken out and left standing in woods, which have increased at the rate of eighteen inches in height, and two inches in circumference will, for the same period, be as follows :—

TABLE No. 5.	<i>Trees.</i>	<i>Feet.</i>
Taken out .	2,349 containing	10,855
Standing ..	373 containing	11,314
	<u>2,722</u>	<u>22,169</u>
		<u>7,288</u>
Making a difference <i>per acre</i> , from <i>extra</i>		
growth, in thirty-six years, of		<u>14,881 feet of timber.</u>

If the calculation be pursued for the whole period of sixty-four years, the result will be as follows :—

[See Table No. 3.] [See Table No. 5.]

	<i>Feet.</i>	<i>Feet.</i>
Contents of trees cut down		
in sixty years	8,897	26,429
Do. of trees left standing		
for sixty-four years . .	<u>7,537</u>	<u>20,138</u>
	16,434	46,567
Difference in favour of No. 5 .	<u>30,133 feet of timber per acre.</u>	
	<u>46,567</u>	

I assume, as a fact proved by my own experience, that the difference in the growth of trees manured and not manured very considerably exceeds six inches in a year. The trees in Mr. Coke's 1,000 acres of plantation may or may not have averaged in growth more than twelve inches yearly; but supposing they have not made more than twelve inches, when if manured they would have made eighteen (and I am of opinion that, whatever their growth may have been, the difference would in proportion be equally great), Mr. Coke's loss by not manuring his land will be far beyond the estimate I have made in the text. His trees have, on an average, been planted nearly thirty-six years. Now, at the end of that

for his ability as a planter, than he is for the taste which he uniformly displays as a landscape gardener, in ornamenting and beautifying gentlemen's estates.

I will now proceed to show the effect of MANURE upon the growth of forest trees. In the year 1818 I purchased about an acre of land, No. 3, adjoining the plantation, No. 1. This land was originally heath, and was allotted under the Act of Parliament before-mentioned, but instead of being planted, was cultivated and cropped with corn and other agricultural crops, and when I took it, was in a *rich state*. I converted the greater part into a garden, and planted about one rood with forest trees, having first trenched the land about two feet deep, and have since kept it thoroughly clean from weeds. These trees are now in the most prosperous state, and, taken altogether, far *exceed* those adjoining, which *were planted seven years before*, and are also much better than the plantation No. 2, which was made *without manure*, in the year following, making every allowance for the additional growth of one year. Some of the oaks are twenty feet in height, and

period, it will appear by reference to Mr. Waistell's tables in the Appendix, that if these trees had made twelve inches in height yearly, he should have cut 3,036 feet of timber *per acre*, and have left standing 4,250 feet; but if they had made eighteen inches per year, instead of twelve, he might have cut 10,855 feet of timber *per acre*, and have had now remaining 11,314 feet. The *extra* produce of the 1,000 acres would therefore have been 14,881,000 feet of timber, which, at one shilling only per foot (and the least valuable timber sells at a higher price), would amount to the enormous sum of 744,050*l.* Surely these calculations are worthy of the consideration of those who are desirous of finding *profitable* employment for the poor. Might not the public forests, and the vast tracts of waste land throughout the kingdom, by the judicious application of the unemployed manual strength of the country, be made an inexhaustible source of national and individual wealth?

measure eighteen inches round at the bottom, and the other trees are equally good.

In the same year (1818) I planted several trees in borders well prepared near my house, No. 4, and being intended for ornament and shelter, more than ordinary pains were bestowed upon them. This labour they have amply repaid. There are elms, oaks, and locusts; from nineteen to twenty-eight feet high, and which girt in proportion; while trees of the same description, planted at the same time upon adjoining borders not so well prepared, are not near the size.

In 1820 I purchased some more heath-land near the above-mentioned. I caused the heath or ling to be pared off and burnt in the method recommended by Mr. Cobbett in his "Year's Residence in America;" and in the following year I planted about twelve acres with forest trees. Upon part of this twelve acres, No. 5, I had the flag-ashes spread before the trees were planted, and removed the ashes from the remaining part. The first year the trees upon the land where the ashes had been spread, showed a most decided superiority over the trees where the ashes had been removed, No. 6, and the difference *has become more manifest every succeeding year*. It is now, indeed, so very great, that it is scarcely credible it should have been produced by such a cause only, but such is the fact, the land being precisely of the same quality, treated in every respect in the same way, except as to the ashes, and planted at the same time with the same kinds of trees. The trees on the one part are nine or ten feet high, and so close together, that they must be pruned and thinned considerably this year, while those on the other part are not more than three or four feet in height, and they by no means cover the ground; and I verily believe that the former will be better at ten years old, than the latter will at twenty or twenty-five. In order, however, to enable the

Society to form their own judgment on the subject, I send specimens of the trees from both parts of the plantation.

Upon another part of the above twelve acres, *from which the flag-ashes were removed*, No. 7, I spread some marle and brick earth, and the trees there grow quite as vigorously as those which had the benefit of the flag-ashes ; and from this circumstance I am convinced that marle or brick earth is very serviceable in promoting the growth of trees upon poor light soils. Specimens of these trees are also sent.

Having thus witnessed the efficacy of manure in the several instances before-mentioned, I determined never to plant another tree without first manuring the ground. In the summer of 1823 I hired some heath-land, No. 8, of the Fishmongers' Company of London, for forty years, under an agreement to plant fifteen acres, having the benefit of the plantation during the term, but leaving the Company one hundred trees an acre at the end of it. It was obvious that the faster I could make the trees grow, the better they would pay me, and with the above experience before me, I resolved to manure the land with both marle and muck. I caused the land to be double ploughed, first with two horses, and then with four, following in the same furrow ; by which means the soil was stirred to the depth of eighteen or twenty inches. I fortunately found the remains of an old marle-pit in the piece, from which I barrowed and spread twenty cart-loads per acre. This I suffered to lie and pulverize all winter, and in the following spring (*viz.* in April, 1824), I carried on and spread twenty loads per acre of good rotten muck, ploughed it in, and planted the trees, which consisted of oak, ash, elm, chesnut, and black Italian poplar, with a few of other sorts.

They took exceedingly well, and many of them made vigorous shoots the first summer ; the second year they nearly covered the ground ; but during this summer their

growth has been prodigious; many of the ash trees have made shoots upwards of five feet long; and, upon an average, I think, both they and the oaks have increased this year full three feet in height. The chesnuts have not done so well, but the poplars have made such progress, that they have actually the appearance of trees eight or nine years old. The severe drought which has burnt up trees on land in a poor and foul state, has had the effect of adding considerably to the growth of these. They have never had the appearance of wanting moisture, although not a drop of rain fell upon them for a period of several weeks, during the very hottest part of the summer. This luxuriant growth I attribute to the deep ploughing, to the highly-manured state of the land, and to its being constantly kept clean and loose upon the surface, by means of the hoe; and I firmly believe that when land is in this state, the weather in England can never be too hot for forest trees.

It is necessary to say something about the expense of doing this, as I am aware that an objection would be raised on that ground by almost every gentleman to whom this mode of planting might be recommended. With the view of exciting attention to the subject, I have put up a board in the plantation by the road-side, enumerating all the particulars, which I will here copy:—

“Experimental plantation, showing the effect of manuring land for forest trees. Planted in April, 1824:

<i>“ Cost per Acre.</i>			<i>£.</i>	<i>s.</i>	<i>d.</i>
“ 20 loads of marle, at 15 <i>d.</i>	...	...	1	5	0
20 ditto of muck, at 5 <i>s.</i>	...	...	5	0	0
Ploughing the land	...	...	1	0	0
Trees, carriage, and planting	...	...	7	10	0
Total cost per acre	...	...	14	15	0”

The ploughing I think I have put 10s. too low, and therefore the total cost per acre may be stated at 15*l.* 5*s.*

This may and will be thought by many to be a great sum; but a nursery-man will not plant with *good* trees, and fill up for three years, under 10*l.* an acre, *exclusive of ploughing*; and observe, that *when you manure*, you never want to fill up, for all the trees are sure to take, and instead of filling up you may, after the third year, take out and transplant at least a tenth part of them. Look, too, at the rapid manner in which the trees grow, and how much more quickly you get a plantation into a *paying state*, than you do when trees are planted without manure. I know hundreds of acres of land, which were planted from fifteen to twenty years ago at an expense of more than 10*l.* an acre, the trees on which would not now be valued at the original cost of planting them, whereas, had one-third more been expended in manuring and properly preparing the land, they would have been worth from 50*l.* to 100*l.* an acre.

A regard to economy in planting is sometimes carried to too great a length. A gentleman (Admiral Windham) about eight miles from me, planted in the same year in which I planted part of No. 8 (1824) forty acres of land upon a cheap plan. Some Scotchmen persuaded him, that neither trenching, nor ploughing, nor cleaning, was necessary; that just to raise a flag, by making a triangular incision, and putting in a seedling plant, and pressing it down with the foot, was quite sufficient to raise in quick time a flourishing and valuable plantation; and that as to the grass and weeds, they would keep the trees warm, and also keep out the drought; they would, in fact, be a source both of heat and moisture; and all this was to be done for 3*l.* 10*s.* an acre. Most gentlemen are disposed to listen to any proposal for doing work cheaply, accordingly the Scotchmen were employed, and planted the

forty acres. But the plantation is a *total failure*; the trees (that is, such of them as are alive) are almost entirely choked with grass and weeds, and are literally worth nothing. The sum of 3*l.* 10*s.* an acre, amounting altogether to 140*l.*, is therefore as completely thrown away as if it had been cast into the sea. Besides the loss of the money, there is the loss of time (which cannot be recovered), the rent of the land, if it were worth any thing, and the mortification of having a favourite object defeated; and to all this gentlemen expose themselves by attempting to effect improvements parsimoniously.

Farmers of poor land generally fall into the same error. They do not perceive, or are unwilling to believe, that it is the trifling expense of a little *extra* manure, that occasions all the difference, upon this sort of land, between an abundant and a short crop; but that such is the case, I have frequently observed in my own immediate neighbourhood. I have myself grown upon poor heath-land nine and ten coombs, and in one instance, eleven coombs and two bushels of wheat an acre, while the adjoining lands of the same description and quality have never exceeded six, and this has been effected merely by laying on an additional quantity of eight loads of muck per acre. My neighbour has put on twelve, and I twenty loads per acre; he has grown six coombs, and I have grown ten. It does not appear to be considered, that in high farming, the muck is the *only* additional part of the expense; the tillage, seed-corn, rent, poor-rates, and labour, being the same, whether you grow six coombs or ten. The same observations will apply to trees, which are sure to pay for all the *extra* cost and labour bestowed upon them.

I cannot conclude without stating a circumstance which exemplifies, in the strongest manner, the power of manure, when applied to a naturally fast-growing tree. I allude to the LOCUST, one of which I planted upon a border in

plantation No. 1, in the year 1821, and being intended for ornament, it was planted with *manure*. In 1824 I cut it down, and in the following year it threw out several shoots, one of which, at the Autumn, measured *ten feet* in height. The following year it increased six feet, and measured six inches round at the bottom; but the upper branch having been blown off, I cut the tree down, and sent it to Mr. Cobbett, at 183, Fleet-street, whom I have requested to send it to the Society.

This year I cut down another *locust*, which was planted *with manure*, at the same time, upon a *soil still worse*, one of the shoots from which has grown to the astonishing length of eleven feet. This I have also sent to the Society.

The success of a plantation almost entirely depends upon the trees being well *set off*. On good land this will be the case without any other assistance than trenching and cleaning; but on poor land, **MANURE** also is necessary. This will enable the plants to strike out numerous and vigorous roots, by which their food is obtained. I am aware that an opinion is entertained, that plants receive a considerable part of their nourishment from the air; but if this be so, it can only be through the medium of their branches and leaves, as being so many channels or vehicles through which that nourishment is conveyed or imbibed; and if manure increases the size and number of these branches and leaves, as it certainly does, it follows, that plants are thereby furnished with additional means of obtaining food; it being obvious, that a tree with luxuriant branches must possess the power of taking up food from the atmosphere in a much greater degree than a feeble plant, with but little wood and few leaves; and therefore manure is equally beneficial to plants, whether they derive their nourishment partly from the air, or wholly from the soil.

Considering the zeal and expense with which all agricultural improvements have been adopted and pursued, it is rather surprising that gentlemen should have devoted so little of their money and attention to the no less important science of planting, and stimulating the growth of, forest trees ; but this lukewarmness may, to a certain extent, be accounted for. Most gentlemen are induced to plant as *cheaply* as possible, under the impression that they are *sinking money for the benefit of their posterity*, or that the *period of return is so remote and uncertain*, that it is scarcely equivalent to the expense they have parsimoniously prevailed on themselves to bestow ; but if they could once be convinced, that by a more *liberal* expenditure they might themselves obtain a speedy and certain return, one of the great obstacles to an improved and profitable mode of planting would be removed, and we might hope to see the country again enriched and embellished, as it evidently was in former times, by forests of oak, and other valuable timber, instead of witnessing, as we now do, innumerable tracts covered with perishable firs, which are worthless, in comparison with other trees, and repulsive to the eye of taste. I am the more inclined to indulge in this anticipation, and to believe that so desirable an event will happen, if the prejudices and opinions which I have alluded to be removed, from the circumstance, that most gentlemen are in the habit of adopting the mode of culture I recommend upon other occasions. No one thinks of planting fruit trees, even in a garden, without manure, and no good farmer attempts to raise a fence upon ordinary land, without mucking it at the time he plants the layer. Fences so raised will make greater progress in one year, than they will in three without manure ; and there is no reason why the same stimulus should not prove equally beneficial when applied to forest trees. I hope, however, that some gentleman,

A PROFIT AND LOSS ACCOUNT
OF
PLANTING ONE ACRE
ON THE SYSTEM

MR. WITHERS'S ORIGINAL EXPENDITURE.

	£.	s.	d.
Purchase of the Land	12	10	0
Fencing ditto.....	1	10	0
Twenty Loads of Marl, at 15 <i>d.</i>	1	5	0
Twenty Loads of Muck, at 5 <i>s.</i>	5	0	0
Ploughing the Land	1	0	0
Trees, Carriage, and Planting.....	7	10	0
	£.28	15	0

RECOMMENDED BY MR. WITHERS
AND THAT GENERALLY ADAPTED
TO SCOTCH PLANTATIONS.

Mr. WITHERS'S Expenditure and PROFIT, reckoning the Annual Increase of the Trees at
Fifteen Inches in Height, and One Inch and a Half in Circumference at the Base.

Years old.	Height.	Girt.	Distance.	Cubical Content of each Tree when cut.		Original Expenditure.	Interest at the End of each Year.			Principal and Interest at End of each Year.			CUT OUT.			Reduced Expenditure.	PROFIT.		Interest of Profit.	Pri Inter at en			
				ft.	in. pts.		£.	s.	d.	£.	s.	d.	£.	s.	d.		No. of Trees.	Cubic Feet.			Price per foot.	VALUE.	£.	s.	d.
	ft.	in.	ft.	ft.	in. pts.		£.	s.	d.	£.	s.	d.			s.	d.	£.	s.	d.	£.	s.	d.	£.
	1 1/4	..	4	..	..	28 15 0	1 9 3	31 4 3	136	..	..	..	..	..	..	failures.	..	..	..	..	..	..
1	..	..	..	..	..	1 0 0	1 11 3	33 15 6	..	..	..	..	..	..	..	..	..	..	..	..	..	..
2	..	..	..	..	..	1 0 0	1 13 9	36 9 3	..	..	..	..	..	..	..	..	..	..	..	..	..	..
3	..	..	..	..	..	1 0 0	1 16 6	39 5 9	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4	..	..	..	..	..	1 0 0	1 19 3	42 5 0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5	..	..	..	..	..	1 0 0	2 2 3	45 7 3	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6	..	..	..	..	..	1 0 0	2 5 3	48 12 6	844	..	..	..	..	..	..	faggots.	..	..	..	..	..	..
7	10	..	..	..	..	1 0 0	2 8 7	51 1 1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
8	..	..	5	..	..	..	2 11 1	53 12 2	532	..	..	..	..	..	..	faggots.	..	..	..	..	..	..
9	12 1/2	..	..	..	..	..	2 13 7	56 5 9	..	..	..	..	..	..	..	..	..	..	..	..	..	..
10	..	..	6	..	..	..	2 16 3	59 2 0	322	each	0 2	2 13 8	56 8 4	..	..	..	..	..	..	..	..	..
11	15	..	..	..	..	..	2 16 5	59 4 9	..	..	..	..	..	..	..	..	..	..	..	..	..	..
12	..	..	7	..	..	..	2 19 3	62 4 0	208	each	0 3	2 12 0	59 12 0	..	..	..	..	..	..	..	..	..
13	17 1/2	..	..	..	..	..	2 19 7	62 11 7	..	..	..	..	..	..	..	..	..	..	..	..	..	..
14	..	..	8	..	..	..	3 2 7	65 14 2	143	178	0 4	2 19 4	62 14 10	..	..	..	..	..	..	..	..	..
15	20	3	..	1 3 0	..	..	3 2 9	65 17 7	..	..	..	..	..	..	..	..	..	..	..	..	..	..
16	..	..	9	..	..	..	3 5 9	69 0 5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
17	22 1/2	3 1/4	..	1 7 4	..	..	3 9 0	72 9 5	75	182	0 6	4 11 0	67 18 5	..	..	..	..	..	..	..	..	..
18	..	..	10	..	..	..	3 7 11	71 6 4	..	..	..	..	..	..	..	..	..	..	..	..	..	..
19	25	3 3/4	..	2 5 3	..	..	3 11 4	74 17 8	58	174	0 8	5 16 0	69 1 8	..	..	..	..	..	..	..	..	..
20	..	..	11	..	..	..	3 9 1	72 10 9	..	..	..	..	..	..	..	..	..	..	..	..	..	..
21	27 1/2	4	..	3 0 0	..	..	3 12 6	76 3 3	45	189	0 10	7 17 6	68 5 9	..	..	..	..	..	..	..	..	..
22	..	..	12	..	..	..	3 8 3	71 14 0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
23	30	4 1/2	..	4 2 7	..	..	3 11 9	75 5 9	35	175	1 0	8 15 0	66 10 9	..	..	..	..	..	..	..	..	..
24	..	..	13	..	..	..	3 6 6	69 17 3	..	..	..	..	..	..	..	..	..	..	..	..	..	..
25	32 1/2	4 3/4	..	5 0 2	..	..	3 9 10	73 7 1	29	194	1 0	9 14 0	63 13 1	..	..	..	..	..	..	..	..	..
26	..	..	14	..	..	..	3 3 8	66 16 9	..	..	..	..	..	..	..	..	..	..	..	..	..	..
27	35	5 1/4	..	6 8 4	..	..	3 6 10	70 3 7	23	179	1 3	11 3 9	58 19 10	..	..	..	..	..	..	..	..	..
28	..	..	15	..	..	..	3 10 0	61 18 10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
29	37 1/2	5 1/2	..	7 9 3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

[This to be inserted between pages 34 and 35.

APPENDIX.

AND LOSS VIEW

OF

E ACRE OF LAND,

ON THE SYSTEM

ED BY MR. WITHERS,

GENERALLY ADOPTED BY

CH PLANTERS.

ORIGINAL EXPENDITURE on the SCOTCH SYSTEM.

	£. s. d.
Value of the Land	12 10 0
Fencing ditto.....	1 10 0
Trees, Carriage, and Planting.....	3 10 0
	£.17 10 0

se of the Trees to be
e at the Base.

Expenditure and LOSS on the Scotch System, reckoning the Annual In-
crease to be Six Inches in Height, and Half an Inch in Circumference.

PROFIT.	Interest of Profit.	Principal and Interest of Profit at the end of each Year.	Height.	Girt.	Distance.	Cubical Content of each Tree when cut.	Original Expenditure.	Interest at the End of each Year.	Principal and Interest at the End of each Year.	CUT OUT.				Reduced Expenditure and LOSS.
										No. of Trees.	Cubic Feet.	Price per foot.	VALUE.	
. s. d.	£. s. d.	£. s. d.	ft. in.	ft. in.	ft. in. pts.	£. s. d.	£. s. d.	£. s. d.	£. s. d.			s. d.	£. s. d.	£. s. d.
.....	0 ¹ / ₂	4	.....	17 10 0	0 14 0	0 17 6	19 1 6	544	.....	.....	failures.	.....
.....	108	.....	.....	failures.	.....
.....	8 ¹ / ₂	.....	.....	.....	.....	.....	38 3 0	.....	.....	.....	.....	.....
.....	12	5	.....	.....	.....	.....	.....	872	.....	.....	faggots.	.....
.....	15	6	.....	.....	.....	.....	76 6 0	532	each	0 2 4 8 8	71 17 4	.....

with better means than I possess, will give the experiment a fair trial upon a large scale. It may be difficult in some situations to obtain sufficient muck, and it is therefore deserving of consideration, whether artificial manures will not answer the purpose: I am of opinion that they will; but I intend to try some experiments on the subject in the ensuing season, the result of which I will communicate to the public.

I am, Sir,

A. Aikin, Esq.

&c. &c. &c.

Secretary, &c. &c.

W. WITHERS, Jun.

APPENDIX.

[This is necessarily given in a separate form; but is here inserted.]